

What is claimed is:

1. A multilayered power supply line having an MIM structure, comprising:

5 a first metal layer that serves as a wiring metal;
 a second metal layer located below the first metal layer; and

 a third metal layer that serves as a capacitor metal, said third metal layer being located between the
10 first metal layer and the second metal layer;

 wherein an insulator is embedded into gap portions defined among these metal layers,

 the second metal layer is electrically connected to the first metal layer and thereby supplied with power
15 identical in potential to the first metal layer, and

 the third metal layer is electrically connected to the first metal layer and thereby supplied with the power identical in potential to the first metal layer.

20 2. A multilayered power supply line according to claim 1, wherein the second metal layer and the third metal layer are identical in potential to each other.

 3. A multilayered power supply line according to
25 claim 2, wherein the first metal layer is supplied with a source potential of an external power supply, and the source potential of the external power supply is supplied

even to the second metal and the third metal layer.

4. A multilayered power supply line according to claim 2, wherein the first metal layer is supplied with a ground potential, and the ground potential is supplied even to the second metal layer and the third metal layer.

5. A multilayered power supply line according to claim 1, which includes metal layers supplied with the source potential of the external power supply and metal layers supplied with the ground potential both of which are alternately disposed in the first metal layer, and has capacitors configured in potential different positions between the first metal layer and the second metal layer and between the first metal layer and the third metal layer.

6. A multilayered power supply line according to claim 5, further comprising:

20 a first 3-layer multilayered power supply line having a second metal layer supplied with the ground potential and a third metal layer supplied with the source potential of the external power supply, and
a second 3-layer multilayered power supply line
25 having a second metal layer supplied with the source potential of the external power supply and a third metal layer supplied with the ground potential.

7. A multilayered power supply line according to claim 5, which includes, in the first metal layer, a capacitor made up of a parasitic capacitance developed between a metal layer supplied with the source potential of the external power supply and a metal layer supplied with the ground potential.

8. A method of laying out a multilayered power supply line having an MIM structure wherein a first metal layer that serves as a wiring metal is disposed over a second metal layer, a third metal layer that serves as a capacitor metal is disposed between the first metal layer and the second metal layer, and an insulator is embedded into gap portions defined among these metal layers, said method comprising the following steps of:

electrically connecting the second metal layer to the first metal layer to allow the first metal layer and the second metal layer to be identical in potential to each other; and

electrically connecting the third metal layer to the first metal layer to allow the first metal layer and the third metal layer to be identical in potential to each other.

9. A method according to claim 8, further comprising the step of:

causing the second metal layer and the third metal layer to be identical in potential to each other and thereby using the third metal layer as a wiring metal.

5 10. A method according to claim 9, further comprising the step of:

 supplying a source potential of an external power supply to the first metal layer and supplying the source potential of the external power supply even to the second
10 metal layer and the third metal layer.

 11. A method according to claim 9, further comprising the step of:

 supplying a ground potential to the first metal
15 layer and supplying the ground potential even to the second metal layer and the third metal layer.

 12. A method according to claim 8, further comprising the steps of:

20 alternately disposing, as the first metal layer, metal layers supplied with the source potential of the external power supply and metal layers supplied with the ground potential, and

 constituting capacitors in potential different
25 positions between the first metal layer and the second metal layer and between the first metal layer and the third metal layer.

13. A method according to claim 12, further comprising the steps of:

constituting a first 3-layer multilayered power supply line by a second metal layer supplied with the ground potential and a third metal layer supplied with the source potential of the external power supply, and constituting a second 3-layer multilayered power supply line by a second metal layer supplied with the source potential of the external power supply and a third metal layer supplied with the ground potential.

14. A method according to claim 12, further comprising the step of constituting, in the first metal layer, a capacitor using a parasitic capacitance developed between a metal layer supplied with the source potential of the external power supply and a metal layer supplied with the ground potential.

15. A method of laying out a multilayered power supply line including a capacitor metal, comprising the following steps of:

using the capacitor metal as a wiring metal with being substituted therewith; and

increasing the wiring metal by one layer on a pseudo basis.